



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/688,525	10/16/2000	Clifford A. Henricksen	02103-393001	3066

26162 7590 11/14/2006

FISH & RICHARDSON PC
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

EXAMINER

MEI, XU

ART UNIT	PAPER NUMBER
----------	--------------

2615

DATE MAILED: 11/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/688,525	HENRICKSEN ET AL.	
	Examiner	Art Unit	
	Xu Mei	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This communication is responsive to the applicant's amendment (RCE) dated 12/15/2005.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 2 and 8-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Onglao (US-6,643,379).

Regarding Claim 2, Onglao discloses a loudspeaker system, comprising: a first loudspeaker array comprising an enclosure (see Fig. 4, 32) having a width and a height and at least six acoustic drivers (1-7) having radiating surfaces (Onglao discloses an embodiment with more than 6 loudspeakers), each of the acoustic drivers having a diameter less than 3 inches (see col. 4, lines 50-62), wherein the at least 6 drivers are positioned in the enclosure in a first substantially straight line, substantially regularly spaced so that the edges of radiating surfaces are less than two inches apart (Onglao shows the separation between each drivers in Figs. 4 or 5 are being much less than the

Art Unit: 2615

speaker's size of less than 3 inches, and clearly less than 2 inches apart), and the first array is constructed and arranged to radiate sound in a predetermined frequency range (Onglao discloses the full frequency range for the array output of 200Hz to 19 kHz, Column 6, 29-39). And the output frequency range of 200 Hz to 19 kHz for the array is inherently at least 6 octaves (it is well known in the art that the frequency response of the human ear is approximately 20Hz to 20KHz which is approximately 10 octaves).

Regarding claim 8, Onglao further discloses an electrical circuit that provides essentially the same audio signal to all of said acoustical drivers at all frequencies (Onglao discloses circuit in Figure 9A which discloses substantially the same audio signal to all of the drivers of 1-7).

Regarding Claim 9, Onglao discloses the width is 2.5 inches and the height of 66 inches for the speaker enclosure (col. 4, lines 55-57) and is producing a height to width ratio that is greater than 11.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Onglao in view of Ferren (US-5,802,190).

Art Unit: 2615

Regarding Claim 3, Onglao discloses the loudspeaker system as discussed in claim 2 above. Onglao further discloses a second enclosure that has the same structure as discussed in claim 2 above (i.e., left and right loudspeaker arrays). What does not taught by Onglao is the two loudspeaker arrays are being connected in a detachable matter as claimed.

Ferren discloses linear speaker array arrangement in the same field of endeavor that having different loudspeaker arrays constructed and arranged to be detachably secured to each other in a manner that extends the first substantially straight line so that the height of said loudspeaker system is increased and so that the width of said loudspeaker system remains constant (Ferren discloses arrays are secured together by conventional fastener means (i.e. detachably secured), e.g. nuts and bolts (Figures 7 and 9) for the purpose of providing an audio program to a representative listeners moving beneath the loudspeaker array (col. 2, lines 22-34).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combines the teaching of Onglao and Ferren by arranging the loudspeaker arrays of Onglao in a horizontal linear matter that is detachably secured to each other in a manner that extends the first substantially straight line so that the height of said loudspeaker system is increased and so that the width of said loudspeaker system remains constant for the purpose of providing an audio program to a representative listeners moving beneath the loudspeaker array, as shown by Ferren.

Regarding Claim 4, Onglao discloses the width is 2.5 inches and the height of 66 inches for the speaker enclosure (col. 4, lines 55-57) and is producing a height to width ratio that is greater than 20.

Regarding claim 5, Ferren further discloses an attachment device (nuts and bolts; Column 6, lines 25-28) for attaching said first loudspeaker array to said second loudspeaker array.

Regarding Claim 6, Ferren further discloses an electrical circuit which provides essentially the same audio signal to all of said acoustical drivers at all frequencies (Onglao discloses circuit in Figure 11 which discloses substantially the same audio signal to all of the drivers (26).

Regarding Claim 7, Onglao further discloses the individual arrays may be secured together by fastener means (i.e. may be removed and portable) (Column 6, lines 24-28).

6. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Onglao in view of Humphrey (US Patent 4,797,633).

Onglao discloses a loudspeakers system as stated apropos of claim 2 above including power amplifiers (see col. 6, lines 29-40). Onglao does not disclose the loudspeaker array that is transduced at least seven watts of electrical energy per square inch of radiating surface. The 7- 3x2 inch loudspeakers as disclosed by Onglao for example (col. 4, lines 61-62) will produce a total radiating surface area of approximately (7 speakers x (3 x 2) = 42 square inches. Humphery discloses a commonly designed

Art Unit: 2615

amplifier (Col. 2, lines 20-22) rated at 100 watts per channel which will produce (100 Watts / 6 inches²) = approximately 16.7 Watts/in² per loudspeaker which is greater than 7 watts/in². Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made for a common amplifier to produce at least 7 watts of electrical energy per square inch of radiating surface by using a common speaker amplifier as disclosed by Humphrey (Col. 2, lines 20-22) to produce a greater audio power output to the listener for each loudspeakers in the array of Onglao.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Porzilli et al and Liljehag et al are made of record here as pertinent art to the claimed invention. The cited references disclose different loudspeaker systems having speaker array(s).

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Xu Mei whose telephone number is 571-272-7523. The examiner can normally be reached on maxi flex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2615

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

2


Xu Mei
Primary Examiner
Art Unit 2615
11/03/2006